REQUEST FOR QUOTATION
Training Module for Facility Representative Welding Safety

Request for Quotation Number: DE-RQ06-06RL14807

Requiring Agency: U.S. Department of Energy, Richland Operations Office (RL)

RFQ date submission: No later than close of business **June 30, 2006**

Type of Award: Firm Fixed Price

This acquisition will be awarded per FAR Part 13, Simplified Acquisition Procedures

FAR CLAUSES INCORPORATED BY REFERENCE:

FAR 52.252-2, Clauses Incorporated by Reference (Feb 1998).

> This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://acquisition.gov/far

EVALUATION CRITERIA

52.212-2, Evaluation—Commercial Items. (Jan 1999)

(a) The Government will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the Government, price and other factors considered. The following factors shall be used to evaluate offers:

Price and Technical

PLEASE SEE:

STATEMENT OF WORK

Training Module for FR Welding Safety Training

GENERAL

The objective of this training is to prepare personnel for surveillances to verify welding activities are implemented safely and that prerequisites for assuring a quality weld are in place. These surveillance activities provide a basis for evaluating the effectiveness of the contractor's program for welding safety and quality and for establishing compliance with DOE requirements. These surveillances are conducted to verify implementation of applicable portions of the requirements from DOE O 440.1A and DOE 420.1B.

CONTRACTOR TASKS

- The successful provider will present training classes within a thirty-one (31) day period on a mutually agreeable schedule that will provide approximately 38 surveillance and management personnel from the DOE Richland Operations Office (RL) and Office of River Protection (ORP) with the familiarity necessary to competently determine if contractor welding and safety activities as delineated in RL/ORP Facility Representative (FR) Surveillance Guide 17.1, WELDING SAFETY AND QUALITY, Rev 0 dated March 6, 2006, are or are not being conducted in accordance with requirements listed or referenced therein.

- The training sessions shall include classroom discussions as well as actual observations of welding and safety activities covered by FR Surveillance Guide 17.1. The students are to be assumed to have the qualifications of degreed Engineers or equivalent. The participants will not be required to actually perform welding, but the proposal shall include the costs of all equipment and materials used by instructors or others who will actually be performing welding of Nondestructive Examination processes as part of the actual welding and safety processes as well as all safety equipment needed by those who will be observing as part of the training.

- Instruction activities shall be held within the hours of 7:00 a.m. and 4:30 p.m.

GOVERNMENT AND CONTRACTOR-FURNISHED ITEMS

- Participants will dress as the selected provider specifies for students in a welding course.

- Facility for classroom instruction will be provided by the DOE or the Contractor. Facility for actual welding instruction will be provided by the Contractor.

- A copy of the Facility Representative (FR) Surveillance Guide 17.1, WELDING SAFETY AND QUALITY, Rev 0 dated March 6, 2006, is provided.

DELIVERABLES

- Training will be consistent with the requirements listed in the Facility Representative (FR) Surveillance Guide 17.1, WELDING SAFETY AND QUALITY, Rev 0 dated March 6, 2006, and ensure participants understand how to safely observe welding operations while determining that welding is being performed safely and in accordance with established contractor procedural and OSHA requirements.

- The Contractor shall ensure that the training is performed in a competent, professional, and safe manner that meets established delivery schedules. Work products and participant handouts are expected to be thorough, accurate, and appropriately documented. To the extent possible, actual welding and safety equipment shall be used and participants shall observe actual welders and welding operations as part of the training process.

QUALIFICATION REQUIREMENTS

The Contractor must demonstrate

- Instructors' familiarity and understanding of the Codes and requirements documents reference in FR Surveillance Guide 17.1, WELDING SAFETY AND QUALITY, Rev 0 dated March 6, 2006.
- Effective communications skills and work relationships.
- Effective implementation of safety, including appropriate personal protective equipment, for trainees and personnel performing welding operations.
- Ability to work in an interactive environment that allows participants to ask questions and receive accurate answer during all phases of training.
- Personnel performing or instructors overseeing the actual welding must be certified to applicable national standards.
- The basic welding techniques shall be explained and demonstrated to provide the participants with an appreciation for the skills necessary to successfully obtain a qualified weld.

IMPORTANT NOTE: Are you registered in the Central Contractor Registration (CCR)? Per Federal Acquisition Regulations, Federal Agencies cannot make awards unless the vendor is registered in CCR. If you are not registered you may go to http://www.ccr.gov and start the registration process.

FR Surveillance Guide 17.1, WELDING SAFETY AND QUALITY,

WELDING SAFETY AND QUALITY

1.0 Objective

The objective of this surveillance is to verify welding activities are implemented safely and that prerequisites for assuring a quality weld are in place. These surveillance activities provide a basis for evaluating the effectiveness of the contractor's program for welding safety and quality and for establishing compliance with DOE requirements.

2.0 References

2.1 DOE O 414.1C, *Quality Assurance*

2.2 DOE O 420.1B, *Facility Safety*

2.3 DOE O 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*

2.4 DOE G 440.1-5, *Fire Safety Program for use with DOE O 420.1 and DOE O 440.1*

2.5 29CFR1910.252, *OSHA Welding Requirements*[1]

2.6 FH Welding Manual (Includes references and links to FH welding-procedures documents.)

2.7 *Welder Performance Qualifications*, HNF-RD-9062

2.8 *Hot Work Performance Requirements*, HNF-RD-9900

2.9 *Occupational Medical Qualification and Monitoring*, HNF-RD-11058

2.10 A*dministrative Control of Welding*, HNF-RD-23775

2.11 J*ob Hazard Analysis*, HNF-PRO-079

2.12 *Work Management*, HNF-PRO-12115

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[1] 29CFR1926, Subpart J, *Welding and Cutting*, has three subparts that cover: 29CFR1926.350, *Gas Welding and Cutting*, 29CFR1926.351, *Arc Welding and Cutting*; and 29CFR1926.352, *Fire Prevention*. Most of the 29CFR1910.252 citations listed in this Guide have similar requirements in 29CFR1926, Subpart J.

2.13 *Guide for Nondestructive Examination of Welds*, AWS B1.10:1999 (In “Misc Info” folder on FR-Prog drive(AP012))

3.0 Requirements Implemented

This surveillance is conducted to verify implementation of applicable portions of the requirements from DOE O 440.1A and DOE 420.1B.

4.0 Surveillance Activities

The Facility Representative confirms the welding activity being observed is being conducted safely (Activity 1), and the welding is being performed by qualified personnel to valid requirements that are specified and assured by qualified personnel (Activity 2).

Surveillance Guideline
WELDING SAFETY AND QUALITY

Surveillance No.: _____

Facility: _____

Date Completed: _____

Activity 1 - Verification the Welding Activity Being Observed Is Being Conducted Safely

Yes	No	N/A	
___	___	___	1. Was an appropriate pre-job briefing conducted with the affected workers and welder(s) prior to the start of work? (Ref 2.9, Table 1, Item 4)
___	___	___	2. Has an appropriate and valid Job Hazard Analysis (JHA) been performed prior to commencement of work and have the activities/tasks to be performed been reviewed in a team environment and approved by appropriate technical disciplines (e.g., Subject Matter Experts [SME]) to identify the hazards and ESH requirements? (Ref 2.11, ¶4.3, Item 2; Ref 2.1 §5) (JHA Number_____)
___	___	___	3. If the work is not performed in a designated welding area/shop, is there a valid, accurate, Hot Work Permit completed, approved and available to cover the welding activity(ies)? (Ref 2.8, ¶2.4, Item 1; NFPA 51B, §5.3.2) (Hot Work Permit # _____)

___ ___ ___ a. If the hot work activities are classified as "high hazard" was there a Fire Protection Engineer's approval on the hot work permit? (Ref 2.8, ¶2.4, Item 2)

Yes No N/A

___ ___ ___ b. If relief of the supervisor(s), hot worker(s) or fire watch(es) is(are) required during the job, due to shift change or other reasons, then does each oncoming supervisor, hot worker, and/or fire watch review the hot work permit, inspect the area for compliance with the hot work permit and initial the hot work permit? (Ref 2.8, ¶2.4, Item 4; NFPA 51B, §5.3.4)

___ ___ ___ 3. Have appropriate and required fire prevention and protection practices and precautions been established that comply with all of the following?

___ ___ ___ a. Is a qualified fire watch established before start of the hot work? (1910.252(a)(2)(iii)(A); Ref 2.8, ¶2.4, Item 3; NFPA 51B, §5.4.1)

- Are Fire watches assigned no other duties? (Ref 2.8, ¶2., Item 3; NFPA 241, §5.1.3.1)
- (For FHI facilities) Has the fire watch successfully completed Fire Watch Training (Course #044400), and is he/she within the re-certification training date? (Ref 2.8, ¶2., Item 3; NFPA 51.B, §5.4)
- Does the fire watch clearly understand the following when performing fire watch duties: (Ref 2.8, ¶2., Item 5; NFPA 51.B, §5.4)

  - The area to be fire watched?
  - Potential fire hazards (to personnel and property)?
  - Appropriate emergency procedures and actions?
  - Methods for sounding the alarm(s)? ((1910.252(a)(2)(iii)(B))
  - Procedure for manually activating fire suppression systems (if applicable)?
  - That he/she has the authority to stop the hot work operations if unsafe conditions develop?

___ ___ ___ b. Is/are suitable fire extinguishing equipment maintained in a state of readiness for instant use? Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the

combustible material exposed. (1910.252(a)(2)(ii); Ref 2.8, ¶2.2, Item 6; NFPA 51.B, §5.3.1)

Yes No N/A

___ ___ ___ c. Do the fire watches have fire extinguishing equipment readily available and have they been trained in its use? (1910.252(a)(2)(iii)(B))

___ ___ ___ d. Do the fire watches know they shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm? (1910.252(a)(2)(iii)(B)) The fire watch shall monitor the work in progress and be alert for: (Ref 2.8, ¶2.2, Item 2; NFPA 51.B, §5.4.1)

- The safety of the welder performing the work.
- Combustible construction materials in building construction or building contents within 35 feet of the work.
- Openings in walls or floors that expose combustible materials in adjacent areas within 35 feet of the work.
- Combustible materials that could be ignited by sparks (even if the material is more than 35 feet from the work).
- Combustible materials on the interior or on the other side of metal partitions, walls, floors, or ceilings that could be ignited by conduction or radiant heating

___ ___ ___ e. Is the fire watch maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires? (1910.252(a)(2)(iii)(B); Ref 2.8, ¶2.2, Item 7.a; NFPA 51.B, §5.4.2)

___ ___ ___ f. Before cutting or welding is permitted, is the area inspected by the individual responsible for authorizing cutting and welding operations? (He shall designate precautions to be followed in granting authorization to proceed preferably in the form of a written permit.) (1910.252(a)(2)(iv))

___ ___ ___ g. If there were combustible materials such as paper clippings, wood shavings, or textile fibers on the floor, was the floor swept clean for a radius of 35 feet (10.7 m)? (If there are combustible floors, they shall be kept wet, covered with damp sand, or protected by fire-resistant shields. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.) (1910.252(a)(2)(v))

Yes No N/A

___ ___ ___ h. If practicable, were any combustibles relocated to be at least 35 feet (10.7 m) from the work site? (Where relocation is impracticable, combustibles shall be protected with flameproofed covers or otherwise shielded with metal or asbestos guards or curtains.) (1910.252(a)(2)(vii))

___ ___ ___ i. Cutting or welding shall not be permitted in the following situations:

- In areas not authorized by management ((1910.252(a)(2)(vi)(A))
- In sprinklered buildings while such protection is impaired. ((1910.252(a)(2)(vi)(B))
- In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts. ((1910.252(a)(2)(vi)(C))

___ ___ ___ 4. Is/are the person(s) exposed to the hazards created by welding, cutting, or brazing operations protected by personal protective equipment (PPE) in accordance with the requirements of 1910.132? (Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.) (1910.252(b)(3); Ref 2.8, &2.1, item 1)

___ ___ ___ a.. Are those performing hot work wearing flame retardant (FR) personal protective equipment to at least the level determined through the Job Hazard Analysis (JHA) process unless approval to deviate was given on a case by case basis by the Job Supervisor and/or FPE (e.g.; FR coveralls, leathers are acceptable in non-radiological areas, or FR/leather full front apron as a minimum for "low hazard" hot work?. (1910.252(b)(3); O 440.1A; 15.c; Ref 2.8, ¶2.1, item 4)

- High visibility vests are not normally made of fire-retardant material.
- If the Radiation Work Permit requires a double set of anti-contamination coveralls, the outer set of coveralls shall be flame retardant. (Ref 2.8, ¶2.1, item 5)

___ ___ ___ b. Are helmets or hand shields used during all arc welding or arc cutting operations, excluding submerged arc welding? (Helpers or attendants shall be provided with proper eye protection). (1910.252(b)(2)(i)(A))

CAUTION: If you are observing welding, do not look at the arc without welding goggles or a welding hood with shaded glass or viewing from behind a welding shield or curtain!

Yes No N/A

___ ___ ___ 5. In a confined space, when arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, are all electrodes removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source? (1910.252(b)(4)(vi))

___ ___ ___ 6. Do welders place welding cable and other equipment so that it is clear of passageways, ladders, and stairways? (1910.252(b)(1)(ii))

___ ___ ___ 7. When arc welding is performed in wet conditions, or under conditions of high humidity, is special protection against electric shock supplied? (1910.252(d)(1)(iii))

___ ___ ___ 8. If personnel use X-rays or radioactive isotopes for the inspection of welded piping joints is the use in conformance with the ANSI Z54.1-1963 for Non-Medical X-ray and Sealed Gamma-Ray Sources? (1910.252(d)(2)(ii))

___ ___ ___ 9. Prior to welding on small tanks, containers or piping, have these items been prepared for hot work and rendered safe or confirmed to be safe for welding? (Ref 2.8, ¶2.6, item 1)

NOTE: Guidance can be found in ANSI/AWS F4.1, Recommended safe Practices for the Preparation for Welding and Cutting Containers and Piping, NFPA 326, Standard Procedures for Cleaning or Safeguarding Small Tanks and Container, API 1104, Standard for Welding Pipelines and Related Facilities, API PUBL 2013, Cleaning Mobile Tanks in Flammable or Combustible Liquid Service, and API PUBL 2201, Procedures for Welding or Hot Tapping on Equipment in Service. (Also see prohibition for welding documented in item 3.i above and in 1910.252(a)(3)(i) prohibition listed below.)

1910.252(a)(3)(i) No welding, cutting, or other hot work shall be performed on used drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present or any substances such as greases, tars, acids, or other materials which when subjected to heat, might produce flammable or toxic vapors. Any pipe lines or connections to the drum or vessel shall be disconnected or blanked.

Activity 2 - Verification the Welding Is Being Performed by Qualified Personnel to Valid Requirements That Are Specified and Assured by Qualified Personnel

The Facility Representative (Surveillant) is not expected nor required to be certified in visual inspections of welds in order to conduct Activity 2. The integrity of most welds is verified principally by visual examination. Even for weldments with joints specified for inspection throughout by other nondestructive examination methods, visual examination still constitutes an important part of practical quality control. Therefore, visual examination is of the first order of importance. The most extensively used of any method of nondestructive examination, visual examination is easy to apply, quick, and often requires nothing other than good eyesight. An extensive review of visual examination is contained in AWS B 1.11, Ref. 2.13.

By interview with the Responsible Engineer, the Welding Supervisor, or the Welder(s) or by review of the applicable Welding Specification or Work Control Document:

Determine the type of welding to be performed: Aluminum, Carbon Steel, Carbon Steel to Stainless Steel, Cast Iron, Copper, Low Alloy Steels, Nickel, Stainless Steel, Stainless Steel to Copper, Stainless Steel to Nickel, Stud Welding, or Miscellaneous Welding Specifications.

Type of welding to be performed:

_____

Determine the welding process to be used: Gas Tungsten Arc Welding (GTAW), Automatic and Machine GTAW - Gas Tungsten Arc Automatic (GTAA) and Gas Tungsten Arc Machine (GTAM), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Stud Arc Welding (SW).

Welding process to be performed:

_____

Using the type of welding and the welding process to be used, determine the applicable welding procedure to be used from the FH Welding Manual . (The Manual includes references and links to FH welding-procedures documents.)

Welding Procedure to be used:

_____

Obtain a copy of the above procedure to be used as a reference during conduct of Activity 2 steps below.

Yes No N/A

___ ___ ___ 1. If the welding activities are identified as Quality Level-1, 2 or 3, and they require the services of the Maintenance organization, are the activities handled in accordance with requirements of HNF-12115, “Work Management”? (Ref 2.12, App. A, item 2)

NOTE: All HAMTC Welders are administered Welder Performance Qualification tests that qualify them for the unique welding process, base metal thickness, filler material, and positions that are applicable to the production welding. Qualification limits (variables) are established by the applicable National Code or Standard. Welder qualifications conducted in accordance with and meeting the requirements of ASME Section IX may be utilized whenever project specifications require that the welders are to be qualified in accordance with American Welding Society (AWS) Standards.

Yes No N/A

___ ___ ___ 2. Does the welder possess the required level of training/certification for the work activities/tasks to be completed, and job classification/position? Refer to HNF-PRO-164, *Integrated Training Electronic Matrix* (ITEM) for job classification/position requirements. (Ref 2.11, ¶2.5, Item 2; DOE O 414.1A, Section 2.a (2)(a); DOE O 440.1A, Section 11; PHMC, Section I.99 (b)(3); 10 CFR 835.103)

3. Refer to applicable welding procedure, HNF- _____ - _____, and visually examine the welding material prior to fabrication to detect conditions that tend to cause weld defects. (Ref 2.13, §3.1.1)

___ ___ ___ a. Are there any scabs, seams, or scale on the surfaces to be welded?

___ ___ ___ b. Are edge preparations, dimensions, and finishes as specified/required?

___ ___ ___ c. Is the alignment and fit-up of work pieces proper and as specified/ required?

___ ___ ___ d. Are the clearance dimensions of backing strips, backing rings, and consumable inserts proper and as specified/required?

4. Refer to the applicable welding procedure, HNF- _____ - _____, and verify the following attributes. (Ref. 2.13, §3.2)

___ ___ ___ a. Do(es) the material(s) to be used comply with the Material Specification listed in the procedure?

___ ___ ___ b. Does the welding process to be used comply with the process listed in the procedure?

___ ___ ___ c. Do(es) the joint configuration(s) to be used comply with the procedure?

___ ___ ___ d. Do(es) the welding position(s) to be used comply with the procedure?

Yes No N/A

___ ___ ___ e. Does the filler material to be used comply with the Specification/ Classification listed in the procedure?

___ ___ ___ f. Does the shielding gas to be used comply with the procedure?

___ ___ ___ g. Is (Are) the number(s) (single/multiple) of welding passed to be used allowable by the procedure?

___ ___ ___ h. Is the welding current and polarity as listed in the procedure?

___ ___ ___ i.. Is the root pass of the weld treated as listed in the procedure?

___ ___ ___ j. Are the preheat, reheat, and ambient temperatures within the limits listed in the procedure?

___ ___ ___ k. Was the maximum interpass temperature maintained within the limit listed in the procedure?

___ ___ ___ l. Was the post-heat temperature maintained within the limits and for the time listed in the procedure?

5. Refer to applicable welding procedure, HNF- _____ -_____, and verify the following attributes for the root pass of welding for the process used.

___ ___ ___ a. Was the size of the electrode as listed in the procedure? (Ref. 2.13, §3.2)

___ ___ ___ b. Was the welding machine's amperage as required in the procedure?

___ ___ ___ c. Was the welding machine's voltage as required in the procedure?

___ ___ ___ d. Was the gas flow rate as required in the procedure?

___ ___ ___ e. Was the welding speed (travel) as required in the procedure?

6. Refer to applicable welding procedure, HNF- _____ -_____, and verify the following attributes for the fill pass(es) of welding for the process used.

___ ___ ___ a. Was the size of the electrode as listed in the procedure? (Ref. 2.13, §3.2)

___ ___ ___ b. Was the welding machine's amperage as required in the procedure?

___ ___ ___ c. Was the welding machine's voltage as required in the procedure?

Yes No N/A

___ ___ ___ d. Was the gas flow rate as required in the procedure?

___ ___ ___ e. Was the welding speed (travel) as required in the procedure?

___ ___ ___ 7. Referring to applicable welding procedure, HNF- _____ - _____, was (were) the material(s) that were welded and the backing materials used listed in the procedure as being acceptable for use with the welding process described in the procedure? Welding material was _____ Backing material was _____

8. Perform a visual examination after welding and verify the following: (Ref. 2.13, §3.3).

___ ___ ___ a. Is the dimensional accuracy of the completed weldments as specified?

___ ___ ___ b. Is the size of welds as specified?

___ ___ ___ c. Are the contour, reinforcement, and surface finish of welds as specified?

___ ___ ___ d. Are the degree of under-fill, undercut, and overlap of welds as specified?

___ ___ ___ e. Is the weld area free of weld spatter, crater cracks, impression marking, scratches, gouges, and arc strikes?

___ ___ ___ f. Is the weld area free of handling damage (clamps, braces, etc)?

If the welding activities are to be observed for more than one shift or more than one day, the control of weld filler material should also be verified if time permits as described below.

9. Verify that weld filler material was properly used and controlled by assuring the following activities were conducted as required by

the indicated sections of the controlling procedure, *Control of Welding Filler Metal*, HNF-PRO-20537

___ ___ ___ a. Were individual activities to be performed at the time of welding filler metal issuance in accordance with Section 5.3 of HNF-PRO-20537?

___ ___ ___ b. Were welder activities during the actual use of the welding filler metal issuance in accordance with Section 5.3 of HNF-PRO-20537?

Yes No N/A

___ ___ ___ c. Was return of welding filler metals to the distribution center issuance in accordance with Section 5.4 of HNF-PRO-20537?

___ ___ ___ d. Was welding filler metals storage issuance in accordance with Section 5.5 of HNF-PRO-20537?

___ ___ ___ e. Was welding filler metals disposal issuance in accordance with Section 5.6 of HNF-PRO-20537?